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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/625,378

07/23/2003

Ian Robinson

NG(ST)-6400

2360

7590

01/18/2006

Christopher P. Harris
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526 Superior Avenue
Cleveland, OH 44114

EXAMINER

CHOE, HENRY

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 01/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/625,378

Applicant(s)

ROBINSON, IAN

Examiner

Henry K. Choe

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-20 and 25-29 is/are allowed.
- 6) ☒ Claim(s) 1,3,10,12,14,16,17 and 21 is/are rejected.
- 7) ☒ Claim(s) 2,4-9,11,13,15 and 22-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/27/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 10, 14, 16 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen et al (Fig. 2).

Regarding claim 1, Chen et al (Fig. 2) discloses an amplifier circuit comprising a power amplifier (62) which provides an amplified output signal (output of 12) associated with an input signal (22), and a cross cancellation component (80) which generates a digital reference signal (a signal connection between elements 80 and 82) that is converted (82) to an analog signal (beta/alpha output of 82), amplified (72) and added (74) to the amplifier output signal (output of 62) to substantially reduced unwanted signals (V_o), distortion and out-of-band emissions associated with the amplified output signal (see lines 25-27 of abstract).

Regarding claim 3, the cross cancellation component (80) generates a precomputed digital signal (left output of 80) that is converted (82) to an analog

signal (a signal connection between elements 82 and 70), amplified (72) and added (74) to the amplified output signal (output of 62) to provide an amplified output signal (V_o) substantially free of unwanted signals, distortion, and out-of-band emissions (see lines 25-27 of abstract).

Regarding claim 10, Chen et al (Fig. 2) further comprising a cancellation amplifier (72) associated with amplification of the error signal (V_d).

Regarding claim 14, the digital reference signal (left output of 80) corresponds to a desired output signal [V_o]; It should be noted that there is a relationship between the digital reference signal (left output of 80) and the desired output signal (V_o).

Regarding claims 16 and 17, the limitations recited in the claims are intended use of the invention. It should be noted that no patentable weight is given to the intended use of the invention since the reference Chen et al (Fig. 2) is capable of performing the intended use of the invention.

Claim 21 is rejected under 35 U.S.C. 102(e) as being anticipated by Sahlman (Fig. 4).

Sahlman (Fig. 4) discloses an amplifier circuit comprising means (402) for modifying a digital input signal [(the connections between elements 401 and 402); I and Q], means (411, 412) for converting the modified digital input signal (outputs of 402) into

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a modified analog input signal (output of 411 and output of 412), means (405) for amplifying the modified analog input signal (output of 411 and output of 412) to provide an amplified output signal (output of 405), and means (413) for adding a cancellation signal (output of 416) to the amplified output signal (output of 405) to reduce errors and out-of-band emissions (see lines 15-18 of abstract) caused by the modifying of the digital input signal [(the connections between elements 401 and 402); I and Q].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al (Fig. 2) in view of Mitzlaff (Fig. 1).

Chen et al (Fig. 2) discloses all the limitations in the claim 12 except for that the amplification system being one of a polar amplifier, a LINC, an envelope tracking amplifier and a Doherty amplifier. Mitzlaff (Fig. 1) discloses an amplifier circuit comprising a Doherty amplifier (Fig. 1). It would have been obvious to substitute Mitzlaff's amplifier (Fig. 1 of Mitzlaff) in place of Chen et al's power amplifier (62 in Fig. 2 of Chen et al) since Chen et al discloses a generic power amplifier thereby suggesting that any equivalent power amplifier would have been usable in Chen et al's reference.

Allowable Subject Matter

Claims 2, 4-9, 11, 13, 15 and 22-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reasons for Allowance

Claims 18-20 and 25-29 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 18, the closest prior art of record, Sahlman (Fig. 4) does not disclose at least the following limitations: a modification component that modifies the digital input signal to mitigate peak signals of the digital input signal. Regarding claim 25, the closest prior art of record, Sahlman (Fig. 4) does not disclose at least the following limitations: generating a digital reference signal that corresponds to an inverted version of a desired output signal. Regarding claim 28, the closest prior art of record, Sahlman (Fig. 4) does not disclose at least the following limitations: separating a sample of the output signal into a plurality of subband output signals.

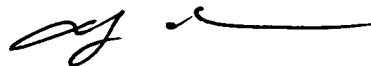
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Patent numbers (6,885,242; 6,188,732) are the feedforward amplifiers with the DSPs.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry Choe whose telephone number is (571) 272-1760.



HENRY CHOE
PRIMARY EXAMINER

#1088